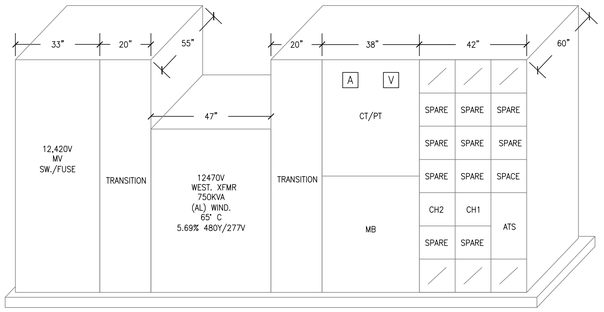
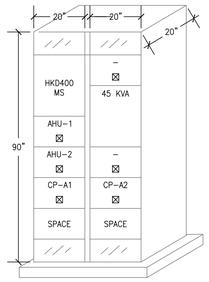


EX. MAIN SWITCHBOARD BLDG. 320

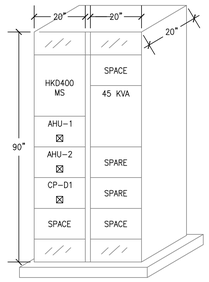
480Y/277V–3PH–4W SCALE: 1/2" = 1'–0"



C/H 2100

EX. MOTOR CONT. CENTER MCP-A

480Y/277V–3PH–4W



C/H 2100

EX. MOTOR CONT. CENTER MCP-D

480Y/277V–3PH–4W

ELECTRICAL SYMBOLS - DIAGRAM

- DELTA CONNECTION
- MOTOR, SINGLE-PHASE
- MOTOR, THREE-PHASE
- TRANSFORMER
- WYE CONNECTION
- EARTH GROUND
- JUNCTION BOX
- PULL BOX
- NORMALLY CLOSED RELAY CONTACT
- NORMALLY OPEN RELAY CONTACT
- FUSE WITH RATING
- MOLDED CASE CIRCUIT BREAKER
- LOW-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- HIGH-VOLTAGE OIL CIRCUIT BREAKER
- HIGH-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- SWITCH AND FUSE UNIT
- GENERATOR, POWER
- POTHEAD
- STRESS CONE
- LIGHTNING ARRESTOR
- METER
- AMMETER
- VOLTMETER
- WATTMETER
- WATT-HOUR METER

ABBREVIATIONS

AAP - AREA ALARM PANEL - MEDICAL GAS	ID - INSIDE DIAMETER
CC - ACCESS	IN - INCHES
ADJ - ADJUSTABLE	
AF - ARC FAULT CIRCUIT INTERUPTER	KEC - KITCHEN EQUIPMENT CONTRACTOR
AFCI - ARC FAULT CIRCUIT INTERUPTER	
AFF - ABOVE FINISHED FLOOR TO BOTTOM OF ITEM	L - LENGTH
AFG - ABOVE FINISHED GRADE TO BOTTOM OF ITEM	LBS - POUNDS
ALT - ALTERNATE	
AP - ACCESS PANEL	MAP - MASTER ALARM PANEL (MEDICAL GAS)
APPROX - APPROXIMATE	MAX - MAXIMUM
ARCH - ARCHITECT OR ARCHITECTURAL	MEZZ - MEZZANINE
ASSY - ASSEMBLY	MFR - MANUFACTURER
ATS - AUTOMATIC TRANSFER SWITCH	MH - MANHOLE OR MOUNTING HEIGHT TO CENTER LINE OF ITEM
	MIN - MINIMUM OR MINUTE
BLDG - BUILDING	MISC - MISCELLANEOUS
BOE - BOTTOM OF EQUIPMENT	MTD - MOUNTED
BOT - BOTTOM	MTG - MOUNTING
BTWN - BETWEEN	
	NIC - NOT IN CONTRACT
CFCI - CONTRACTOR FURNISHED CONTRACTOR INSTALLED	NOM - NOMINAL
CKT - CIRCUIT	NTS - NOT TO SCALE
CLG - CEILING	
CMU - CONCRETE MASONRY UNIT	OD - OUTSIDE DIAMETER
CONN - CONNECT OR CONNECTION	OFCI - OWNER FURNISHED CONTRACTOR INSTALLED
CONTR - CONTRACTOR	OFOI - OWNER FURNISHED OWNER INSTALLED
CORR - CORRIDOR	
CTR - CENTER	PC - PLUMBING CONTRACTOR (DIVISION 22)
COR - CONTRACTING OFFICER'S REPRESENTATIVE	PLBG - PLUMBING
	RAD - RADIUS
D - DEPTH	REC - RECESSED
DET - DETAIL	REQD - REQUIRED
DIA - DIAMETER	RI - ROUGH-IN
DIM - DIMENSION	
DIV - DIVISION	S - SURFACE MOUNTED
DN - DOWN	SC - SECURITY CONTRACTOR
DWG - DRAWING	SCH - SCHEDULE
	SHT - SHEET
EA - EACH	SMS - SECURITY MANAGEMENT SYSTEM
EC - ELECTRICAL CONTRACTOR (DIVISION 26)	SPEC - SPECIFICATIONS
EJ - EXPANSION JOINT	SQ - SQUARE
ELEC - ELECTRICAL	SS - STAINLESS STEEL
ELEV - ELEVATION OR ELEVATOR	STD - STANDARD
EM - EMERGENCY	STRUC - STRUCTURAL OR STRUCTURE
EQ - EQUAL	SUC - SITE UTILITY CONTRACTOR
EQS - EQUIPMENT SUPPLIER	
EQUIP - EQUIPMENT	TC - TECHNOLOGY CONTRACTOR
ETR - EXISTING TO REMAIN	TEMP - TEMPERATURE
EX - EXISTING	TOE - TOP OF EQUIPMENT
EXP - EXPANSION	TYP - TYPICAL
EXT - EXTERIOR	
	UNO - UNLESS NOTED OTHERWISE
FCE - FIRE CONTROL EQUIPMENT	
FF - FINISHED FLOOR ELEVATION	VFD - VARIABLE FREQUENCY DRIVE
FLR - FLOOR	VOL - VOLUME
FSC - FIRE SUPPRESSION CONTRACTOR (DIVISION 21)	
FT - FEET	W/ - WITH
FTG - FOOTING	W/O - WITHOUT
	WP - WEATHERPROOF
GC - GENERAL CONTRACTOR	
GF - GROUND FAULT CIRCUIT INTERRUPTER	ZVC - ZONE VALVE CABINET
GFCI - GROUND FAULT CIRCUIT INTERRUPTER OR GOVERNMENT FURNISHED CONTRACTOR INSTALLED	
GFFT - GROUND FAULT FEED THRU	
HC - HVAC CONTRACTOR (DIVISION 23)	
HP - HORSE POWER OR HIGH POINT	
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING	

SEQUENCE OF CONSTRUCTION

GENERAL NOTES:

A. SEQUENCE OF CONSTRUCTION INDICATED BELOW IS ONE POSSIBLE SOLUTION TO MINIMIZE DOWNTIME OF THE BUILDING ELECTRICAL SYSTEM. CONTRACTOR IS REQUIRED TO SUBMIT A DETAILED SEQUENCE OF OPERATIONS TO THE COR AT THE BEGINNING OF THE PROJECT. DEVIATIONS FROM THE FOLLOWING PROPOSED SEQUENCE OF CONSTRUCTION WILL BE REVIEWED, BUT WILL NOT BE GROUNDS FOR ADDITIONAL COST TO THE GOVERNMENT. PROPOSED SEQUENCE OF CONSTRUCTION MUST BE APPROVED BY THE COR PRIOR TO COMMENCEMENT OF WORK. NOT ALL WORK DETAILED ON DRAWINGS IS INDICATED IN SEQUENCE, BUT SHALL BE COMPLETED.

B. ALL CUTOVER WORK REQUIRING BUILDING ELECTRICAL SYSTEM DOWNTIME SHALL BE DONE OUTSIDE OF NORMAL WORKING HOURS (NIGHTS), DURING MILD WEATHER (MINIMAL HEATING/COOLING LOAD) AND SHALL BE COORDINATED WITH COR WELL IN ADVANCE.

C. DETAILED SITE INVESTIGATION OF ALL AREAS OF WORK SHALL BE PERFORMED INCLUDING REMOVING PANELBOARD/DISTRIBUTION PANELBOARD COVERS, CEILING TILES, ETC. TO VERIFY EXISTING CONDITIONS, NEW EQUIPMENT LOCATIONS, FEEDER ROUTES, ETC. CONTRACTOR SHALL THEN SUBMIT A DETAILED SEQUENCE OF CONSTRUCTION PLAN INDICATING ESTIMATED CUTOVER DATES, POWER OUTAGES AND PROJECT MILESTONES. PROJECT PLAN SHALL BE REVIEWED WITH KEY BUILDING STAFF AND COR AND ADJUSTED BASED ON THEIR INPUT.

D. 21 DAYS BEFORE ANY CUTOVER WORK IS PERFORMED, CONTRACTOR SHALL SET UP A MEETING WITH COR AND DEPARTMENT MANAGER OF AREA AFFECTED BY OUTAGE. CONTRACTOR SHALL REVIEW ALL PANELS WHICH WILL BE AFFECTED, START AND END TIMES OF OUTAGE AND ROUGHLY WHICH LOADS WILL BE DOWN DURING CUTOVER WORK.

E. FOR BUILDING–WIDE OUTAGES, PROVIDE 100kW, 208Y/120V–3PH–4W PORTABLE DIESEL GENERATOR (LOCATED NEAR CHILLERS) AND TEMPORARY POWER CABLING TO A 100 AMP LOAD CENTER LOCATED IN EACH WING (A–E). RUN TEMPORARY CABLING WITH RECEPTACLES APPROXIMATELY 40' O.C. DOWN EACH CORRIDOR FOR SELECTED LOADS THAT NEED TO REMAIN ON DURING OUTAGE. CABLING SHALL NOT BE INSTALLED BEFORE 10PM. FOR PANELBOARD/TRANSFORMER OUTAGES, PROVIDE SAME AS ABOVE WITH RECEPTACLES IN CORRIDOR IN VICINITY OF POWER OUTAGE ONLY. REMOVE ALL TEMPORARY CABLING BEFORE 7AM.

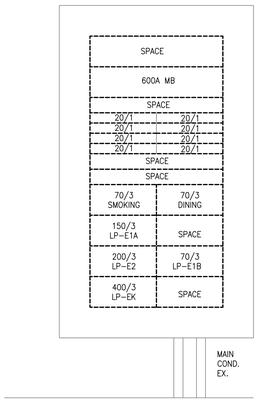
PHASE 1: PERFORM SITE GRADING, INSTALL GRAVEL ROAD, POUR GENERATOR CONCRETE PAD, INSTALL NEW EMERGENCY GENERATOR AND PERFORM 100K KW LOAD BANK TEST. INSTALL NEW LIFE SAFETY BRANCH (ATS, TRANSFORMER, DISTRIBUTION PANEL AND PANELBOARDS). ROUGH–IN ATSCR EMERGENCY FEEDER FROM NEW GENERATOR TO ATSCR AND MAKE READY FOR CUTOVER. DE–ENERGIZE NORMAL SOURCE TO ATSCR, DISCONNECT EXISTING EMERGENCY FEEDER AND PULLBACK CONDUCTORS, TERMINATE NEW EMERGENCY FEEDER CONDUITS/CONDUCTORS TO ATSCR (INCLUDING START SIGNAL) AND RE–ENERGIZE ATSCR NORMAL SOURCE. ATSCR LOAD SIDE SHALL BE DE–ENERGIZED FOR NO LONGER THAN 2 HOURS. INDICATED BRANCH CIRCUITS CAN THEN BE TRANSFERRED TO LIFE SAFETY PANELS ONE AT A TIME. CUTOVER SHALL BE PERFORMED AT NIGHT. RECONNECT EXISTING GENERATOR FEEDER TO ATSCR IF ISSUE ARISES WITH NEW FEEDER/GENERATOR.

PHASE 2: PREP WING A, B, C AND D ELECTRICAL CLOSETS FOR TRANSFORMER REPLACEMENT: POUR CONCRETE PAD EXTENSIONS, RELOCATE FIRE ALARM PANELS, ROUGH–IN NEW ENCLOSED CIRCUIT BREAKERS, PRIMARY AND SECONDARY FEEDER CONDUITS, ETC. FOR NEW 75 KVA TRANSFORMERS. ROUGH–IN NEW Tx–EM DISCONNECT SWITCHES, PRIMARY AND SECONDARY FEEDER CONDUITS (FOR Tx–EM TRANSFORMERS) AND MAKE CUTOVERS ONE WING AT A TIME. Tx–EM LOAD SHALL BE DE–ENERGIZED FOR NO LONGER THAN 2 HOURS. CUTOVER SHALL BE PERFORMED AT NIGHT.

PHASE 3: REMOVE 112.5 KVA TRANSFORMERS, FUSIBLE DISCONNECT SWITCHES, PRIMARY AND SECONDARY FEEDERS AND INSTALL NEW 75 KVA TRANSFORMER. MAKE FINAL PRIMARY AND SECONDARY CONNECTIONS. Tx–z LOAD SHALL BE DE–ENERGIZED FOR NO MORE THAN 6 HOURS. CUTOVER SHALL BE PERFORMED AT NIGHT.

PHASE 4: REMOVE PANELBOARD INTERIOR/COVERS SCHEDULED FOR REPLACEMENT AND PROVIDE NEW INTERIOR/COVERS AS INDICATED. PANELS SHALL BE REPLACED ONE AT A TIME TO MINIMIZE WING OUTAGE. PANELS INDICATED TO BE REPLACED WHERE AN UPSTREAM OUTAGE/CUTOVER IS REQUIRED SHALL BE REPLACED AT THAT TIME (WITH THE EXCEPTION OF BUILDING WIDE OUTAGE). PANELS THAT DO NOT, SHALL BE REPLACED (DE–ENERGIZED) FOR NO LONGER THAN 3 HOURS AT NIGHT.

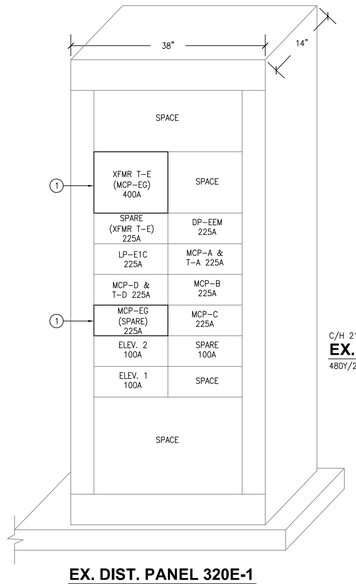
PHASE 5: REPLACE EXTERIOR LIGHTS AND REMAINDER OF WORK INDICATED.



(TO BE REMOVED)

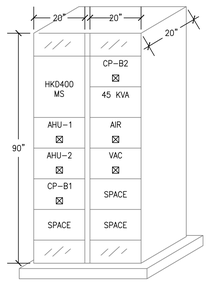
DIST. PANEL DP-1

208Y/120V–3PH–4W



EX. DIST. PANEL 320E-1

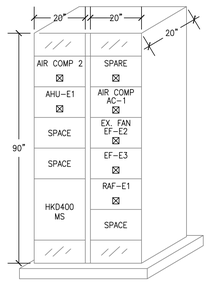
480Y/277V–3PH–4W



C/H 2100

EX. MOTOR CONT. CENTER MCP-B

480Y/277V–3PH–4W



C/H 2100

EX. MOTOR CONT. CENTER MCP-E1

480Y/277V–3PH–4W

ELECTRICAL SYMBOLS - POWER PLAN

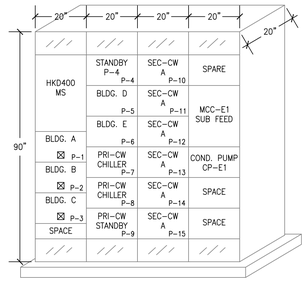
- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- VFD VARIABLE FREQUENCY DRIVE
- MOTOR
- T TRANSFORMER, PLAN
- WYE CONNECTION
- EARTH GROUND
- JUNCTION BOX
- DP# DISTRIBUTION PANEL
- PANELBOARD CABINET, FLUSH MOUNTED
- PANELBOARD CABINET, SURFACE MOUNTED

DETAIL NOTES

1. UTILIZE BREAKER FOR LOAD INDICATED. LOAD IN (PARENTHESIS) IS EXISTING LOAD TO BE REMOVED.

GENERAL NOTES

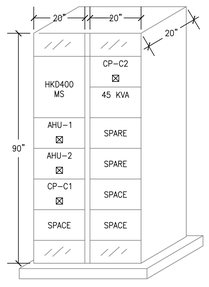
A. VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO DEMOLITION, FABRICATION, ERECTION AND CONSTRUCTION.
B. DRAWING REPRESENTS GENERAL INTENT. MINOR VARIATIONS MAY BE REQUIRED TO COMPLETE WORK.
C. COORDINATE PHASE COMPLETION AND START–UP WITH REQUIREMENTS AS SET FORTH BY THE C.O.R. TO MAINTAIN DAILY OPERATIONS TO NEAR AS NORMAL AS POSSIBLE.
D. COORDINATE ACCESS TO ALL PHASES OF CONSTRUCTION, DELIVERIES, AND DEBRIS REMOVAL WITH THE C.O.R. SEE GENERAL REQUIREMENTS.
E. PROVIDE AND MAINTAIN NEGATIVE AIR PRESSURE WITH HEPA FILTRATION AT ALL CONSTRUCTION AREAS.
F. EXISTING POWER MUST BE MAINTAINED THROUGHOUT AS REQUIRED DURING EACH PHASE OF CONSTRUCTION. COORDINATE POWER CUTOVERS/OUTAGES WITH THE C.O.R.
G. COORDINATE SEQUENCE CONSTRUCTION WITH C.O.R. SO THAT ONLY ONE SIDE OF ANY CORRIDOR IN USE IS OBSTRUCTED AT ANY ONE TIME.



C/H 2100

EX. MOTOR CONT. CENTER MCP-EG

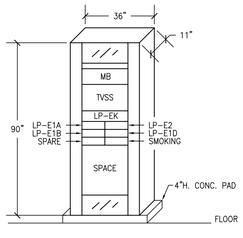
480Y/277V–3PH–4W



C/H 2100

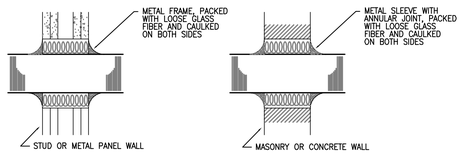
EX. MOTOR CONT. CENTER MCP-C

480Y/277V–3PH–4W



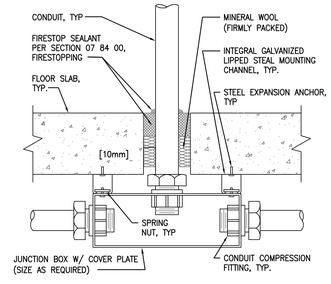
NEW DIST. PANEL 'DP1'

SCALE: 3/8" = 1'–0"



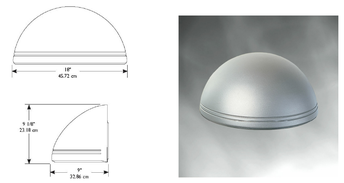
TYPICAL CONDUIT AND WALL PENETRATIONS

SCALE: NONE



FLOOR SLAB PENETRATION DETAIL

NTS



CONSTRUCTION: SINGLE PIECE DIE CAST ALUMINUM HOUSING, SILICONE GASKETED DOOR.

FINISHES: TGIC BRONZE POWDER COAT PAINT.

LISTINGS: UL1598 FOR WET LOCATIONS.

LED COLOR: 4000K, 350mA CURRENT, TYPE 3 DISTRIBUTION.

VOLTAGE: 120V

WATTS: 35W

MOUNT AT EXISTING FIXTURE MOUNTING HEIGHT.

OUTDOOR WALL MOUNTED LED FIXTURE

E
W1

ADDENDUM 1	2013-02-08
Revisions:	Date

CONSULTANTS:

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
Heapy Project Number: 2012–04022 Firm License: 01528

Drawing Title: SYMBOLS AND DETAILS

Project Title: CORRECT ELECTRICAL DEFICIENCIES - B320

Location: 4100 WEST THIRD STREET DAYTON, OH 45428

Project Number	Building Number	Drawing Number
552-13-304	320	320E001

Date	Checked	Drawn
12-17-2012	MSG	SC

Dwg. 6 of 14

Office of Construction and Facilities Management
Department of Veterans Affairs

PROJECT NO. 2012-04022 PLOTTED BY: schhun
HEAPY ENGINEERING PLOT DATE: February 8, 2013
DAYTON/COLUMBUS, OHIO & INDIANAPOLIS, INDIANA
MECHANICAL, ELECTRICAL, COMMISSIONING, TECHNOLOGY

H:\L400\2012-04022\AutoCAD2012\Improve Electrical system B320 - FCA\320E001 SYMBOLS & DETAILS.dwg 2-08-13 12:48:03 PM schhun

VA FORM 08-6231